

The third was a very large epithelioma, requiring the removal of not only the larynx, but also the trachea down to the sternum, and that without reaching the limit of the disease. The patient recovered, but died $4\frac{1}{2}$ months later from a recurrence. The operation is easy of performance, and from that standpoint is not excessively grave. And from the standpoint of survival, it is like other operations for tumours, indicated in relatively benign and in a number of epithelial tumours. The operation is composed of several steps: (1). Preliminary tracheotomy, which should be done so as to permit a point of healthy skin to be left between the two wounds after the operation. (2). Anæsthesia, which is very easily obtained by placing a sponge filled with chloroform in front of the canula. (3). The preservation of the trachea. The canula of Trendelenberg is excellent provided, the reservoir be filled with water and not with air. It is important to habituate the patient to the canula before the operation. (4). The operation itself. He makes an incision, the transverse branch of which lies at the level of the hyoid bone and the vertical stops within a centimetre of the tracheotomy wound. He then cauterizes with the fine knife of the galvano-cautery. When the muscular insertions are detached, the larynx should be isolated with the spatula and fingers like a tumour. To separate the larynx from the œsophagus, the procedure from above downward is preferable. When the upper part is reached, incline the larynx to one side and cut the greater cornu of the hyoid bone of the opposite side. Then dividing the other cornu, the larynx is released. Then the epiglottis is examined and removed or left in place according to its state. Apply several sutures above, insert the œsophageal catheter and dress with iodoform gauze.—*French Congress of Surgery, Revue de Chirurgie*, Nov., 1886.

JAMES E. PILCHER (U. S. Army).

CHEST AND ABDOMEN.

I. Further Observations on Thoracocentesis for Empyema. By Dr. PAUL BLUMBERG (Baku). The author published two cases of empyema treated with paracentesis by means of a trocar, the canula of which was allowed to remain in the wound until recovery

was complete, which appeared in the *Zeitschrift f. Chirurgie*, Vol. 22 (vide *ANNALS OF SURGERY*, Vol. iii, p. 83). Since then his views have met with opposition, especially in the Caucasian Medical Society.

In the present paper he meets the objections raised. No new cases are given.

The author concedes that free incision, as a mode of treatment for empyema is preferable to paracentesis; but he argues that the latter may be preferable under certain conditions, as in country practice without assistance, or when empyema of the left side prevents the use of an anæsthetic, or when the patient refuses his consent to the operation of incision and resection of ribs.

Paracentesis, moreover, does not prevent the subsequent performance of the operation of incision, which may in some cases be delayed with advantage.

Antiseptic precautions can be quite as readily carried out, if a canula is inserted into the pleura, as when an incision has been made. A double-current catheter may be employed for the daily irrigations of the pleura, without fear of compression of the lung or dislocation of the heart.

Nor is it to be feared that fibrin shreds may occlude the canula. The author has never seen loose masses of fibrin in moist pleuritic exudates, and does not believe they occur. Occlusion through pus may be combatted by irrigation.

The use of the author's canula also does away with the necessity of a diagnostic aspiration. If, after introduction of the canula, the pleuritic effusion proves to be serous, the canula is to be afterward removed; if it proves purulent, the canula is left in situ.

Two cases illustrating his manner of operating are promised shortly. *Deutsch. Zeitschr. f. Chir.*, Vol. 23, Hft. 5 and 6, June, 1886.

II. Laparotomy and Intestinal Suture for Perforating Typhoid Ulceration. By Prof. A. LUCKE (Strasburg). A fatal case with remarks. A woman, æt. 28, had just been dismissed from the obstetric department after her sixth puerperium, when she was seized with typhoid fever and admitted to the medical department.

Fever continued over 40,0°C.—treated with antipyrin, for one week, when suddenly severe abdominal pains with rigors occurred, cold sweats, collapsed condition, pulse 180, small, localized pain on pressure at umbilicus, vomiting, tenesmus; treatment, opium, and ice locally applied. Diagnosis was made of perforation of typhoid ulceration, and laparotomy proposed. Under suitable precautions, dimethyl-acetale-chloroform being administered as an anæsthetic, incision was made in the middle-line; a quantity of greyish turbid fluid escaped, having a faint feculent odor, and containing numerous fibrin flakes. Presenting intestines slightly adherent and covered with fibrin-formation. In the small intestine a perforation was soon recognized; the part removed by a cuneiform exsection; sutures to mucous membrane, and Lembert's sutures applied—the gut again disinfected, and replaced—the abdominal cavity having previously been irrigated with salicylic solution, and thoroughly cleansed.

Suture of peritoneum, of integument; large drainage-tube inserted in lower angle of wound. Iodoformized dressings, and wood-wool.

Duration of operation nearly two hours; towards the end failing of pulse at wrist, which did not again recover, in spite of stimulants. Death next morning—nineteen hours after operation. with temperature of 40,7°C. Post-mortem revealed presence of feculent pus in Douglas' pouch, the end of drainage tube leading into it abruptly bent and occluded. Sutured portion of gut in good condition.

The case is published on account of the interest recently excited in the indication given for laparotomy by perforation of typhoid ulcers. The prognosis is bad, in any case.

The puerperal condition of the patient enhanced the danger in this case. The long duration of the operation is a disadvantage, especially as peritonitis is already present.

The author proposes to perform the operation at two sittings; making an artificial anus the first day, and suturing the gut, or resecting it, the second. Several ulcerations might be included in one excised piece. A drainage tube into Douglas' cul-de-sac he thinks indispensable, especially if the operation were to be done at two times.—*Deutsch. Zeitschr. f. Chir.* Bd. 25. Hft. 1 and 2., Dec., 1886.

W. W. VAN ARSDALE (New York).

III. Operations for Echinococci of Liver. By Prof. N. V. SKLIFOSOVSKY (Moscow, Russia). In the surgical clinic of the Moscow University, Prof. Sklifosovsky has operated on three patients for echinococci of liver.

CASE I. Anna F., a peasant woman, was admitted to the clinic on April 8, 1886. It was found that three large cysts were connected with the liver; the largest of them, the size of the head of a ten-year-old child, was in the middle of the belly, almost reaching the pubes; the second one, of a smaller size, was projecting from behind the edge of the ribs, and the third one, of the size of two fists of an adult person, was projecting in the axillary line. The latter two cysts were fluctuating, their contents easily passing from one to another. The former cyst was rather hard, and had no connection with the other two. An opening 10 cm. long was made in the linea alba, between the navel and the pubes. Thin layer of left lobe of liver was found to extend down within $1\frac{1}{2}$ inches from the pubes. The professor turned it aside and then sewed the sac of the cyst to the abdominal wall. As fluid began to flow from the cyst (punctured by the needle) a large trocar was introduced and the contents of the cyst were half emptied; then the cyst was firmly attached to the wall and perfectly emptied. Iodoform dressing. There was no fever after the operation. In eight days another operation was performed. An incision, 12 cm. long, was made in the mammary line and the liver, was sewed to the edges of the wound. Four days after a trocar was introduced into the cyst (the liver tissue over it being about 2 cm. thick) and the contents of both cysts was emptied. The sacs were washed with a solution of corrosive sublimate, drainage tube was introduced (likewise in the first operation) and the wound dressed. The patient was doing well, but as the clinic was closed, she was transferred to a city hospital. The final result is unknown.

CASE II. V. M., male, æt. 44, always kept many dogs. Since January, 1884, he complained of a pressure in the side of the liver, and in May a tumor, the size of a fist, was perceptible. The patient was admitted into the clinic on May 11, 1885. He was very emaciated; never had had jaundice. A tumor of the size of the head of a new born

babe was connected with the left lobe of the liver. The patient felt no pain in the liver, but he complained of a shooting pain in the left shoulder and of a dull pain in the lumbar region. Operation on May 25. An incision 8 cm. long was made and the cyst was attached to the abdominal walls by silk sutures. Five days afterwards a trocar was introduced and a plate full of fluid with some hydatid sacs was emptied. The same contents continued to flow through a drainage tube. On May 26, during a paroxysm of cough, the patient felt as if something had burst about the cyst, and immediately a stream appeared from the drainage tube, giving five platefuls of an opaque fluid, pus and hydatid sacs. Since then the patient was rapidly improving. July 15 the sac was filled with healthy granulations, and the drainage tube only 5 cm. long could be introduced.

CASE III. P., lawyer, was treated for pleurisy in July, 1884, without any improvement. On February 6, 1885, in the clinic, the patient had a paroxysm of cough and he spit out a large hydatid sac. On February 10, again a spasmodic cough, and the patient spit out about two hundred sacs of different sizes. It was evident that the echinococci of the liver found their way to the lungs without affecting the diaphragm. Professor Sklifosovsky performed the following operation: He made excision of a part of the sixth rib, 10 cm. long, between the mammary and the axillary lines, and then made a large opening into the cyst from which a purulent fluid had burst, containing a large amount of hydatid sacs and some bile. Corrosive sublimate wash and drainage. In three weeks there was no more connection between the cyst and the bronchial tubes. On May 30 the patient left the clinic cured.

Dr. J. K. Spizjarny, who reported these cases, on having reviewed the former methods of treatment for the echinococci of the liver, comes to the conclusion that the opening of the cyst in two sittings (Volkman's method) or in one sitting (the latest method) must be preferred to all other methods (puncture, cauterization, injection, etc.)—*Vratch* (St. Petersburg), Jan. 16, 1886.

P. J. POPOFF (Brooklyn).

IV. On Subdiaphragmatic Echinococci and their Treatment. By Dr. LEOPOLD LANDAU (Berlin). Davaine, in 1860, and

Frerichs, in 1861, demonstrated that echinococcus sacs in the liver grow with greater frequency into the right side of the thorax, pushing up the diaphragm, compressing the lung, and displacing the heart upwards and to the left.

These authors have described cases, coming under their own observation, where the diaphragm was pushed upwards as high as the second rib and the heart raised up to the third intercostal space.

Seligsohn, Herrlich and Genzmer have reported similar cases. Israel operated a case of echinococcus of the convexity of the liver, making a resection of the ribs, a plan of treatment which Roser had recommended in 1864.

The author reports the following cases :

CASE I. Female, æt. 36. Eleven confinements. For the past six years she has remarked a swelling in the epigastrium and another in the right hypochondriac region. Two years ago pains in the chest between the shoulders began; also disturbances of digestion, frequent vomiting, heart palpitations and increasing difficulty in breathing. These symptoms increased in time very considerably, the dyspnoea being frequently very great and alarming. On examination, pulse was 108, temperature slightly above normal, and percussion and auscultation pointed to hydrothorax of both sides. Dulness on left side extended much higher up than on the right, beginning at the third rib in front, on the right side at the middle of the scapula.

In spite of this dulness sharp vesicular breathing distinctly heard below the niveau of the dulness in the axillary line. Heart displaced to the left and upwards. Just below the ensiform process a swelling is visible when the patient assumes a recumbent position. This swelling is solid to the touch, and its dulness undistinguishable from that of heart or liver. Abdomen distended irregularly, the right hypochondrium being much more so than the left, and occupied by a large tumor, the upper boundary of which is the fourth rib, its lowest near the crest of the ilium. No fluctuation of the epigastric swelling and no hydatid fremitus. Clear fluid is drawn off on introducing a needle. Operation. Incision, exposing liver, made in the linea alba, beginning about three fingers' width over the umbilicus, and ending at the

xiphoid process. Nothing of the echinococcus sac at first detected, but on passing the finger behind the xiphoid process up along the diaphragm, a hard spot was felt on the convexity of the liver. This organ was anteverted and dislocated downwards. Two sutures introduced at each angle of the wound through the parenchyma of the liver, peritoneum and abdominal walls, and held, tightly drawn, by an assistant. The sac lay more in the left hypochondrium than in the right, on the convexity of the left lobe. The liver was incised to the depth of 3 ctm., when hundreds of echinococci vesicles and about $\frac{1}{2}$ a litre of clear fluid was evacuated. The number of vesicles was about 500, varying from the size of a bean to that of a hen's egg. The large sac was attached above to the diaphragm. The edges of the liver wound were united to those of the abdominal incision by strong vertically placed sutures, the cavity of the cyst cleansed with a solution of corrosive sublimate (1 to 5,000), and three rubber drainage tubes (15 ctm.) inserted. Operation lasted 50 minutes. The drains remained for 38 days, when fresh ones were introduced. Cavity completely closed eleven weeks after the operation. During this time no irrigation of the cavity. Patient made a good recovery, giving birth to a child 10 months after her discharge.

CASE II. Female, æt. 37, healthy and strong until five years since. From that time on gastric disturbances, dyspnœa increasing in intensity. Motion is painful, and in walking her whole body inclines to the left. When she attempts standing in an erect position, great pain is felt. Respiration rapid, superficial. Over right lung dulness on percussion, beginning in front at the fourth rib and posteriorly about the middle of the scapula. No respiratory murmur heard there. Heart displaced to the left. Abdomen distended in the right upper portion by a tumor extending from the region of the axilla to the umbilicus. The same is soft, elastic and smooth on palpation. On puncturing in the eighth and ninth intercostal spaces, in the axillary line, some watery, clear, neutral fluid is drawn off. Operation: Beginning at the axillary line, the incision was made parallel to the fibres of the external oblique muscle, about 16 ctm., in a downward direction, ending circa 3 ctm. above the margin of the liver. Division of the transversus,

fascia, etc., and the liver pushed to the left and retroverted.

The latter was then sutured to the abdominal wound. The sac lay on the posterior abdominal wall and extended from the kidney to the diaphragm, into the thorax, a distance of about 30 ctm. Incision being made, there escaped many hundred vesicles, but no fluid. Whether the diaphragm was perforated or not could not be determined. The uppermost wall of the sac, situated at about the third rib, could be only reached with a probe. Three drainage tubes introduced. Wound closed, excepting for a space of 6 ctm. Operation lasted one and a half hours.

During the following seven days the patient's condition caused much anxiety. The pulmonary catarrh increased, enormous quantities of muco-purulent masses were expectorated, and the temperature rose considerably. On the fifth day symptoms of pulmonary œdema developed, but disappeared on the administration of stimulants. Urticaria also developed. On the eighth day sutures removed; the drains allowed to remain. No irrigation of the cavity. Patient now made rapid progress towards recovery. Four weeks after the operation the drains were shortened. The abdominal wound, however, was not entirely closed until about the 5th month.

CASE III. Female, æt. 30, strong and well nourished. Complains of pain, feeling of pressure and fulness in the epigastrium for the past three months. The right half of the abdomen and the lower portion of the thorax on the right side bulges considerably. An elastic tumour felt in the abdomen, reaching from the axilla nearly to the umbilicus. Size of liver about normal. Puncture shows the presence of echinococcus fluid. Whether the echinococcus was attached to the kidney or the right lobe of the liver, could not be ascertained. On the outer side of the left thigh (lower third) was an exceedingly hard subfascial tumour, about the size of a hen's egg. Operation: Incision parallel to the external oblique muscle, from the axillary line near the ribs, reaching to the tumor. The latter proved to be the right lobe of the liver. This was pushed to the left and sutured to the upper and lower angles of the wound, completely shutting off the peritoneal cavity. The sac, lying behind the liver, was then opened, there escaping about

one litre of watery fluid, containing a few vesicles. The sac was firmly stitched to the abdomen and drains introduced. Incision made into the small, hard tumour on the thigh, gave vent to circa 50 small vesicles. Both operations lasted about 30 minutes. The wound and cavity healed up rapidly, having completely closed with granulation tissue in six to seven weeks. No irrigation of the cavity was made. Secretion very slight. Complete recovery.

CASE IV. Male, æt. 34, ill for some ten years with symptoms of liver disease. Repeated attacks of icterus and dyspepsia, accompanied by swelling of the abdomen, which latter has steadily increased. Patient is greatly emaciated. The lumbar vertebræ curve to the right. The abdomen is more distended in the right half than in the left. Over the whole right half of the abdomen absolute dulness, also over almost all the left half. Dulness of liver begins at the third intercostal space. Diffuse râles over both lungs. Heart greatly displaced upwards. The tumors in the abdomen are hard and elastic to the touch. No fluctuation or hydatid fremitus. Operation: Incision parallel to the external oblique muscle, beginning at the margin of the ribs on the left side, about 30 ctm. in length, and exposing the cyst, which had been previously fastened to the abdominal wall by means of sutures. About six litres of vesicles of different sizes escaped when the sac was opened. The latter extends obliquely upwards as high as the diaphragm behind the liver, for a length of 40 ctm. The diaphragm is pushed up so far that the whole forearm may be introduced before the uppermost point of the same is reached. Liver greatly displaced to the left and adherent to the anterior wall of the abdomen. The enormous cavity of the sac extended on the left nearly to the spleen. It was impossible to remove all the vesicles there, many being held too firmly by the aspiration of the lungs. Three large drainage tubes, about 40 ctm. long, were introduced, and the anterior walls of the sac stitched firmly to the abdomen. A contra-opening for the secretion in the lumbar region made, and another drain inserted in this. The abdomen, although much reduced in size after this procedure, was still very much enlarged. Bi-manual examination through the opened sac discovered the presence of isolated cysts, parent vesicles, under the

ribs of the left side and in the left iliac fossa. Incision and drainage. Operation lasted one and three-fourths hours. During the entire protracted convalescence patient was free from fever. For three and a half months after the operation the secretion of bile from out the cavity was remarkably profuse. No trace of bile visible in feces. The cavity healed very slowly, and when the patient was discharged in two months, the right cavity still contained the drains, and the epigastrium was still swollen. Six weeks later removal of drains, when cavity closed rapidly. The subjective and objective condition, however, was not satisfactory, and it was feared that a retention existed in the sub-diaphragmatic cavity, leaving it doubtful whether echinococci would not again appear. Patient, however, went about his accustomed work as usual.

Many echinococci in this region grow directly into the abdominal cavity, causing atrophy of the liver parenchyma; others, by their increasing size, bring about a strong rotation of the liver around its horizontal axis, and so great a displacement downwards that they eventually are found entirely in the abdominal cavity in contact with its muscular walls. These cases are, of course, easy of access to diagnosis and treatment, as compared with those lying just in front or just behind the coronary ligament. With the increase of size of these echinococci upwards, the consequent dislocation of lungs and heart, symptoms of very dangerous character in respiration and circulation appear, of purely a mechanical nature. The diaphragm, in some cases, becomes perforated by pressure of the echinococcus, sometimes into the pleural cavity, oftener into the lungs; occasionally also into the pericardium, causing death. In Davaine's statistical report we find nine cases of perforation into the pleural cavity and twenty-one cases of perforation into the base of the lungs or bronchi. Symptoms consequent to the displacement of the abdominal organs necessarily follow, such as dyspepsia, nausea, vomiting, etc., also periods of pain, caused by pressure on the nerves. In some cases the marasmus is so great in consequence of these troubles, that the patients have the appearance of being afflicted with some malignant disease. Icterus from closure of the gall-duct is also present at times. The consistency of

the echinococcus sac is usually very great and especially so in those cases where the sac is surrounded by the liver substance. This fact renders it liable to be confounded with carcinoma. The firm consistency of the cysts undergoes a change only when these perish or when the young cells contained in the parent vesicles burst (from trauma, puncture, etc.), leaving an intermediate fluid between the vesicles. The great vehemence, with which the cysts gush out on opening the sac, shows how great the intracellular pressure must be. The author does not consider the so-called hydatid fremitus a reliable symptom of the presence of echinococci. The only certain means of diagnosis is the puncture of the cyst. When, in the region of the bony thorax, a clear watery fluid is obtained, which on being boiled gives no precipitate with acetic or nitric acid, or arg. nitricum in other words, contains no albumen or sodium chloride, the diagnosis is clear enough, even though the microscope shows no hooks or scolices. The same clear fluid, containing but a trace of albumen, is only found in hydronephrosis and cysts of the broad ligament. The author calls attention to the very frequent appearance of urticaria after puncture of the sac, an affection supposed by some authorities to be caused by the succinic acid always present in echinococcus fluid. He considers the appearance of this cutaneous affection a symptom of considerable diagnostic value. As regards operative treatment, much will depend on the position, etc., of the echinococcus sac. When this has not extended in its development into the abdominal cavity proper, but backwards against the posterior wall, pushing the diaphragm upwards and the liver downwards, author makes his incision in the axillary line, beginning slightly above the margin of the liver and running about 10 to 15 ctm. in length. The liver is then stitched firmly to the lower angle of the wound and the sac opened. In cases where the echinococcus lies anteriorly to the coronary ligament, growing towards the anterior wall, the liver being generally anteverted, the author incises parallel to the right curve of the ribs, if the echinococcus is more on that side of the abdomen. If the sac on the contrary lies more to the middle or left side, incision should be made in the linea alba, as in Case I.

The after-treatment is simple. The sutures are removed in the

course of six to nine days. Complete union of the sac and wound edges will be found. Landau does not irrigate the cavity of the sac at all, and the same drains, gradually shortened, remain until almost entire obliteration of the sac takes place. Suppuration did not take place in any of his cases, only some slight amount of muco-serous secretion. Regarding the nature and cause of the profuse bile secretion in these operated cases, there are many different opinions. Küster thinks that it is owing to a septic condition. Genzmer and Leisrink, also Korach believe that it is caused by echinococci penetrating into the larger biliary vessels, respectively, by the rupturing of a large biliary vessel. Israel considers the exfoliation of the connective tissue sac to be the real cause. The author finally is of the opinion that this secretion is dependent on the celerity and intensity with which the connective tissue capsule surrounding the parent vesicle exfoliates, exposing thereby echinococci of the liver together with biliary vessels. The microscopical examination of an operated case of this kind of Wechselmann's showed that the whole connective tissue capsule of the parent vesicle was richly supplied with biliary vessels, running partly parallel to the sac, partly penetrating this directly, at right angles. This fact, the author thinks, substantiates his theory. The secretion of bile into the sac ceases only when the wounded surface of the liver heals over. In none of the cases of the author has this profuse secretion of bile in any way given rise to injurious consequences.—*Deutsch. Med. Wochens.*, Nov. 25, Dec. 2 and '9, 1886.

C. J. COLLES (New York).

V. Notes of a Case of Gastrostomy. By G. A. HAWKINS-AMBLER. This operation, which was successful when reported August 21, 1886, was performed on December 17, 1885, by Dr. Kilner Clarke, of Huddersfield, at Dr. Hawkins-Ambler's suggestion. For two years previously the patient had suffered from a gradually increasing stricture of the œsophagus located at the level of the upper border of the manubrium sterni. It was diagnosed to be malignant. A severe attack of hæmorrhage came on very suddenly on November 14, 1885, and Dr. Ambler was called in. By December 17 the patient had suffi-

ciently recovered to undergo the operation. The margins of the stomach were first percussed out, and then an incision was begun three-fourths of an inch above the margin of the ribs and carried four inches downwards, in the line of the rectus, "one and one-half inches internal to the left nipple line, viz., one-half inch to the inner side of the linea alba. The fibres of the rectus were separated with the handle of the scalpel, the peritoneum opened, and the stomach recognized and drawn forwards. Two silk loops were inserted into the stomach at an interval of one-third inch apart at its most presenting part, and four silk sutures on either side, each traversing one-half an inch of the serous and muscular coats of the stomach, brought its wall into close contact with the margins of the wound," leaving exposed a piece of stomach the size of a sixpence. "The peritoneum was united with carbolized catgut sutures," and the margins of the wound brought together above and below the loops in the stomach. A small drainage tube was put into lower part of wound. Antiseptic precautions during operation and in subsequent dressing. Ether was tried at first, but chloroform was substituted for it on account of tumultuous action of the abdominal muscles. The wound was dressed under the spray every second day until the 5th, when the stomach was opened. At the second dressing the drainage tube was removed. "The patient was fed every two hours with Slinger's suppositories, which proved of great value, and injections of peptonized milk and other foods alternately, all of which were retained. The rectum was washed out with warm water prior to each nutrient injection, and the bowels were relieved daily." Before opening the stomach its cavity was dilated by an effervescing draught given in two parts separately by the mouth. After the incision a piece of No. 9 gum elastic catheter was inserted, and some of Benger's food injected. Leakage occurred at each feeding at first, but this became gradually less as the wound contracted. On January 25 there was merely a round aperture for Krohne's apparatus.

Digested foods, beef-tea, eggs, wine and whiskey are administered every three or four hours to the extent of a pint each time, and there is no gastric discomfort. * * * The gain in strength and comfort resulting from the operation is most marked and gratifying, and there

can be no question that life has been considerably prolonged by it." The points to which Dr. Ambler calls especial attention are: (1). Percussing out the stomach before the first incision. (2). The advantage of its direction parallel to the rectus. (3). The dilation of the stomach by the effervescing draught previous to its being opened.—*Lancet*, August 21, 1886.

C. W. CATHCART (Edinburgh).

VI. Laparotomy for Pistol-shot Wound of the Stomach: Perforations of Small Intestine not Recognized during Life. Death. By CHARLES K BRIDDON, M. D. (New York). A woman had accidentally shot herself two hours before admission to hospital; the wound was $3\frac{1}{2}$ inches above the umbilicus and $\frac{1}{2}$ inch to the left of the median line. Owing to absence of urgent symptoms, the operation was delayed until the following morning, at which time, the temperature was 102° Fahr. and the general condition about the same as the night before. The abdominal wall was disinfected by the application of sublimate solution, and afterward of a saturated solution of iodoform in ether; the sponges were kept in a warm sublimate solution, 1-5000. Under ether, an incision was made from the ensiform cartilage to the umbilicus through at least three inches of fat; when the muscular layer and posterior sheath of the rectus were divided, another thick layer of fat was exposed, on division of which the peritoneum appeared, was nicked and divided the whole length of the wound. On pressing the stomach downward, some bloody serum was found, and in the deeper veins a fluid, which it was thought, had a milky appearance. The cavity was so deep that an attempt was made to obtain a better view by drawing out the omentum and transverse colon and laying them, enveloped in warm flat sponges, on the lower thoracic wall; this failing to give sufficient room, the opening in the abdominal wall was enlarged downward to a point midway between the umbilicus and the pubes. The omentum and colon were now returned to the abdominal cavity and maintained there by flat sponges; the stomach was again examined and there was found a small rent in the omentum close to its attachment to the greater curvature. This was

enlarged by the fingers sufficiently to admit a thorough inspection of the space behind the stomach where were found a few coagula of blood. After a prolonged search and examination at that portion of the greater curvature from which the omentum was detached, there were found two linear slits, with ragged edges communicating with the interior of the stomach, one of these being situated anterior, the other posterior to the insertion of the omentum, and not a half inch apart.

At this time the condition of the patient was critical, and the indications were to conclude the operation as quickly as possible. Hypodermatics of camphorated ether were used. The perforations were closed by two lines of Lembert's sutures. As there was a little adherent omentum at either end of the second row of sutures, a deeper suture was carried through at that point so as to include this, the toilet of those parts above the transverse colon carefully made and some grumous blood and what was supposed to be stomach contents removed. Tamponades of iodoform gauze were introduced, one into the space behind the anterior layer of the omentum, the other into the space outside of it. The abdominal walls were brought together by a number of silver-wire relaxation sutures and intermediate ones of catgut. The superficial dressing consisted of iodoform and bichloride gauze. The operation lasted two hours. The patient's condition was not very promising, and she was immediately placed in bed and surrounded by hot bottles.

She rallied well from the ether and did well for the remainder of the day, but on the ensuing day her temperature rose steadily and rapidly to 106° Fahr. with pulse at 150 and respiration 15; pulmonary œdema appeared at 9 p. m and death supervened at 11:45 p. m.

The autopsy showed signs of acute general peritonitis with recent adhesions throughout the cavity, in which about 5viii of watery, greenish-brown liquid, thought to be fæcal, was found. The stomach wounds were found to be in good condition, but following the small intestine past the duodenum, four wounds were found in the upper part of the jejunum, all within a distance of three inches; the course of the bullets could easily be traced by several ecchymotic spots in the tissues; its direction was downward, backward and outward, and it

was found anterior to the left kidney, in the left axillary line and about one inch below the line of the umbilicus. During the time that the stomach wound was being sewed up the indications for a rapid operation were urgent, and it was probably due to this cause that the wound of the intestine was not recognized. In future the operator would regard none of his operations as complete until the whole of the intestinal tract had been examined from one end to the other.—*N. Y. Surgical Society*, Dec. 8, 1886.

VII. The Danger of Hypodermic Injections of Morphine in the Treatment of Strangulated Hernia. By M. ROUTIER (Paris). During the preceding year the writer had operated twice for strangulated umbilical hernia; the first operation was performed twelve hours after the strangulation and was a perfect success. He was not called to the second until five days after the onset of the trouble, and found gangrenous points scattered along 75 cm. of intestine; he resected the entire affected part, but the patient soon died. This patient had been treated with injections of morphine, which had relieved the pain and arrested the symptoms, and thus caused the grave error of permitting fatal temporization. He has since ascertained that the use of injections of morphine is very common in strangulated hernia. Various cases have been published in favor of this treatment, but none are convincing; it is impossible to understand how morphine can favor spontaneous reduction; in that case it would be necessary for the strangulation always to lie in the ring and for the relaxation of the muscles to have an influence upon it, which is doubtful. Nothing then is farther from being proven than the good results of this treatment; on the contrary, its dangers are self-evident, since, by diminishing pain and vomiting, it permits temporization which is always exceedingly dangerous, for the operation is acknowledged to be the more dangerous as it is delayed. The treatment of strangulated hernia by morphine should be very energetically rejected, and it should be held as an axiom that a patient with strangulated hernia should not be left until relieved.—*French Congress of Surgery, Revue de chirurgie*, November, 1886.

VIII. Surgical Intervention in Non-strangulated Epigastric and Ad-umbilical Hernia. By F. TERRIER (Paris). By the expression, epigastric and ad-umbilical hernia, the author refers to hernia lying at the linea alba in the epigastrium and about the umbilicus. These hernias are of two principal varieties; (1) Hernia properly called, containing omentum or intestine, and sometimes both; (2) Fatty hernia, which sometimes coexists with hernia proper. All classical authors declare surgical intervention in this class of tumors to be contrary to the dictates of good surgery. The author combats this dictum and, in support of his position, details four cases in which he has operated upon such tumors with success, and quotes successful operations by Czerny, Maunoir, Reverdin and Banks. He further subdivides the lesions for which operative interference is indicated as (a) fatty hernia, with or without a central diverticulum, (b) fatty hernia surrounding a peritoneal sac containing an omental hernia, (c) simple omental hernia and (d) finally and more rarely intestino-omental hernia. Whatever the lesion, the method of radical cure is the same in the first steps; the latter steps vary according to the nature of the hernia and possible complications, particularly adhesions.

The most minute antiseptic precautions being taken, a vertical incision should be made through the integument of the hernia. Sometimes this is sufficient, sometimes, however, it becomes necessary to combine with it a horizontal incision, giving rise to four flaps. The integument dissected up, the surgeon generally comes upon an abundant cellulo-fatty tissue, sometimes forming a veritable lipoma; this tissue should be dissected and isolated down to the adjacent aponeurotic layers, *i. e.* to the fibrous ring, to the margin of which it is generally adherent; this dissection made with care, it is of advantage to incise this lipoma or pseudo-lipoma from above downward, layer by layer, to see that there is no peritoneal sac more or less developed in its centre; the existence of such a sac seems to be quite frequent, and while it may be empty, constituting a simple serous diverticulum, it may be filled with omentum, adherent to its walls or the neck of the sac or not.

In case of simple peritoneal diverticula, the lipoma or fatty hernia should be resected and the diverticulum sutured so as entirely to close

the peritoneal cavity. Then the margins of the ring should be freshened and sutured, together with the skin.

If the hernial sac, more or less lined with fat, is filled with omentum, it should be freely incised and the omentum reduced if non-adherent, or its adhesions destroyed, drawn out a little, ligatured with catgut by two or three loops arranged X-like, resected, and the stump reduced. The hernial sac and the fat lining it should then be resected so that only the fibrous ring is left. Then, as in the preceding case the margins of the ring should be freshened; sometimes it is preferable to transform it into an ellipse by resecting its upper and lower edges; this form permits the better apposition of the opposite margins. Finally the ring should be sutured with catgut, when the opening is not too large and silver wire, when it is necessary to make a little effort on the neighboring parts in order to occlude the orifice. The entire abdominal wall, not omitting the peritoneum, should be included in each of the sutures, except in the case where a separate suture is applied to a small peritoneal diverticulum; it is well to add superficial sutures to perfect the union of the skin, especially after crucial incision.

If the sac contains at the same time omentum and intestine, the procedure is still simple in theory. The integument should be incised vertically or crucially and the hernial sac, more or less lined by fat, should be opened, taking care not to wound the omentum and especially the intestine, which may be adherent; when the gut is free in the sac, it should be reduced and kept reduced with a sponge held by forceps in the fibrous opening; in the contrary case, the intestine should be liberated by a careful dissection, which is often difficult. Then the omentum should receive attention; if it is non-adherent, it should be reduced like the gut and kept so with a sponge; if adherent, it should be treated as in the simple adherent omental hernia.

In all the cases reported, the result was excellent in that the patients were relieved from pain and gastro-intestinal complications; in three of the author's cases, a slight hernial point persists, which is, however, perfectly controlled by a bandage, and does not discommode the patients. In the case of Maunoir, Czerny and Banks no ulterior eventration is mentioned; however, the subjects were required to wear a

bandage. In the author's third case and in Reverdin's case, there was no ulterior eventration. He concludes:

1. Fatty hernia of the linea alba, sometimes determining troubles of the digestive apparatus, can be treated by excision with primary union of the ring, through which they have protruded, and the integument which covers them.

2. Hernia proper, omental, intestinal or omento-intestinal, determining gastro-intestinal troubles, sharp pain or annoying deformity, should be treated like other varieties of hernia—a radical cure should be sought for by reduction, excision of the hernial sac, freshening of the ring, and suture of the abdominal wall, ring and integument *en masse*—*Revue de chirurgie*, Dec., 1886.

IX. The Treatment of Hernia by Subcutaneous Injection. By W. B. DE GARMO, M. D. (New York). This paper opens with an interesting historical sketch of the operation, and proceeds to a discussion of the Heatonian method of white oak bark injection; after seven years experience with this procedure, during which he has used it upon upward of one hundred cases, he considers himself justified in claiming for it; 1. Freedom from danger. 2. That about 45 % of all cases can be cured by it, and in selected cases, an average of 75 % can be obtained. 3. That many extreme cases, uncontrollable by means of a truss, can be brought under control by its aid. 4. That it is followed by improvement in almost every instance. 5. That children who have not been cured by mechanical means, can in almost every case be cured by this operation. He calls attention to the error of expecting a radical cure from a single injection in old scrotal hernia where the sac and the surrounding tissues are thickened and changed in character; it should be remembered that in these old neglected cases, there is not only the dilated, shortened canal and thickened sac, which are disposing causes to recurrence of hernia, but a funnel-shaped opening into the upper part of the canal from the abdominal cavity, which is persistent owing to the slowness with which the neck of the hernia is obliterated and during this time, thorough and constant protection must be afforded by mechanical support; in these cases, the

operation must be modified, or such cases should be excluded entirely.

Care should be taken to make the puncture directly through the integument over the abdominal ring and not through the scrotal tissues, as inflammatory action may be much more readily set up in the latter by the fluid following the needle in its withdrawal; another objection to injection through the scrotal tissues is that when the hernial sac is of large size and adherent, the injection is more likely to be deposited within than without the canal; while this accident will do no harm, it will do no good, for the action of the irritant must be upon the canal and not to any extent upon the sac.—*N. Y. Med. Rec.*, Jan. 8, 1887.

GENITO-URINARY ORGANS.

I. Nephrotomy for Pyonephrosis. By FREDERICK LANGE, M.D., (New York). A woman, æt. 33, had had pain in the left lumbar region for years, had developed a leucorrhœa of gonorrhœal origin eight weeks previously, had had cystitis for several weeks and within the last fortnight severe pain had supervened in the left lumbar region where a tumor about the size of a new-born child's head could be felt, exploratory puncture of which revealed pus. Lumbar incision opened a large, pretty smooth cavity covered with a thin mucous membrane, at the bottom of which a roundish, fleshy eminence could be felt and seen, apparently the main portion of the kidney; this was fluctuating, and incision with the actual cautery discharged a moderate quantity of pus; the finger could feel the dilated calices in the cavity. The larger cavity was apparently not in free communication with this main part of the pelvis. Both cavities were thoroughly drained and weak solutions of boric acid used as a wash during the after treatment. Recovery was smooth and cicatrization complete in about eight weeks. From the history of the case it seems probable that hydronephrosis had existed for a long time and suppuration supervened in consequence of gonorrhœal infection.—*N. Y. Surgical Society.* Nov. 22, 1886.

II. Nephrectomy for Pyonephrosis. By FREDERICK LANGE, M.D., (New York). A man, æt. 38, had for two years increasing pain and discomfort in the right hypochondrium, and on bimanual palpation